U.S. Department of Energy
Directives

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Document type: DOE-Directives
Document: DOE O 452.1E, Nuclear Explosive and Weapon Surety Program, Review and Comment

Overall Comments

Major comment from Debra Smiley for Bonneville Power Administration
This package represents the official, consolidated comments of **Debra Smiley**
The Bonneville Power Administration (BPA) appreciates the opportunity to comment on draft DOE Order 452.1E, Nuclear Explosive and Weapon Surety Program. BPA has no edits or comments to the draft Order as written. Again, BPA appreciates the opportunity to review and comment on the draft Order.

Response:
Accept

Suggested comment from Marilyn Jacobs for Headquarters EM
No Comment

Response:
Accept

Suggested comment from Bill Schwartz for Headquarters HG
This package represents the official, consolidated comments of **Poli A. Marmolejos, Director**
No Comment

Response:
Accept

Suggested comment from Felicia Jones for Headquarters IG
No Comment

Response:
Accept

Suggested comment from Emily Jackson for Headquarters LM
No Comment

Response:
Accept

Suggested comment from LaVerne Fuller for Headquarters MA
This package represents the official, consolidated comments of **N/A - Comment package automatically submitted.**
No Comment

Response:
Accept

Major comment from Cathy Tullis for Headquarters NA
This package represents the official, consolidated comments of **Cathy Tullis**

Included comments:

SME llluna@sandia.gov

A major concern with the change in the first and second standards is that it appears to remove the value the NESS provides. The NESS group uses a systems approach to Nuclear Safety. It considers the results of the AB weapons reponse, but it also looks at the integration of the weapon, process, facility and environment to assure that all hazards and threats have been addressed. The new standards could have the process stop afer identifying two positive measures (as that is all that is required) rather than considering all steps necessary for implementing safety.

The AB process proives value in the assessment of hazards and weapons response. The controls are generated from this work. The NESS provides an independent look from a different point of view. It is qualitative and looks at the entire system. Using two different approaches to safety helps ensure that all issues are found and addressed. This improves Nuclear Safety.

Response:
Reject

The changes to the standards do not remove any value provided by NES evaluations.

SME llluna@sandia.gov

All comments in the order also apply to the corresonding section in the CRD, Attachment 1. The major or suggested follows the comment in the order section of the document.

Throughout the document, changing from Nuclear Detonation to Nuclear Explosive Detonation is a departure from the Walske letter of March 14, 1968, which is a cornerstone of nuclear safety. It should remain nuclear detonation.

Throughout the document, one point safety should apply in all environments, not just "otherwise normal environments" or "credible environments". This also flows from the Walske letter, which requires no premature nuclear detonations in abnormal environments with a probability of one in a million. Credible is not used to describe the environments. The only caveat is that they are STS environments.

Walske is a cornerstone of nuclear safety. Careful consideration should be given to any changes to this long standing set of requirements.

I can provide a copy of the Walske memo.

Response:
Accept with Modifications

The change from "nuclear detonation" to "nuclear explosive detonation" is necessary due to critical assembly definitions. This change does not depart from the Walske criteria.

See previous comments on changes made with respect to the phrase "otherwise normal environments".

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a. CRD attachment. Comments reflect same emphasis as #6 & #8.

SNL COMMENT: A major concern with the change in the first and second standards is that it appears to remove the value the NESS provides. The NESS group uses a systems approach to Nuclear Safety. It considers the results of the AB weapons reponse, but it also looks at the integration of the weapon, process, facility and environment to assure that all hazards and threats have been addressed. The new standards could have the process stop afer identifying two positive measures (as that is all that is required) rather than considering all steps necessary for implementing safety.

The AB process proives value in the assessment of hazards and weapons response. The controls are generated from this work. The NESS provides an independent look from a different point of view. It is qualitative and looks at the entire system. Using two different approaches to safety helps ensure that all issues are found and addressed. This improves Nuclear Safety.

Response:
Accept with Modifications

The change from "nuclear detonation" to "nuclear explosive detonation" is necessary due to critical assembly definitions. This change does not depart from the Walske criteria.

See previous comments on changes made with respect to the phrase "otherwise normal environments".

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a.CRD attachment. Comments reflect same emphasis as #4.

SNL COMMENT: All comments in the order also apply to the corresonding section in the CRD, Attachment 1. The major or suggested follows the comment in the order section of the document.

Throughout the document, changing from Nuclear Detonation to Nuclear Explosive Detonation is a departure from the Walske letter of March 14, 1968, which is a cornerstone of nuclear safety. It should remain nuclear detonation.

Throughout the document, one point safety should apply in all environments, not just "otherwise normal environments" or "credible environments". This also flows from the Walske letter, which requires no premature nuclear detonations in abnormal environments with a probability of one in a million. Credible is not used to describe the environments. The only caveat is that they are STS environments.

Walske is a cornerstone of nuclear safety. Careful consideration should be given to any changes to this long standing set of requirements.

I can provide a copy of the Walske memo.

Response:
Accept with Modifications

The change from "nuclear detonation" to "nuclear explosive detonation" is necessary due to critical assembly definitions. This change does not depart from the Walske criteria.

See previous comments on changes made with respect to the phrase "otherwise normal environments".

Suggested comment from Jennifer Kelley for Headquarters SC
This package represents the official, consolidated comments of **Stephanie Short, Associate Deputy Director for Field Operations**
No Comment

Response:
Accept

Suggested comment from John Wall for Headquarters CF
This package represents the official, consolidated comments of **N/A - Comment package automatically submitted.**
No Comment

Response:
Accept

1-3. POLICY; CANCELLATION; APPLICABILITY

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In item (2), please add the word "Use" before the word "Control."

Response:
Accept Added "Use" before "Control".

SME Eric.Mulch@hq.doe.gov
Cannot set Policy via an Order. See O 251.1C paragrpah 5. This section should be renamed "purpose" in accordance with O 251.1c and the Order template at https://www.directives.doe.gov/development-and-review-of-directives/directives_templates.

Response:
Accept

"Policy" changed to "Purpose".

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME pasena@sandia.gov

(6) should include recodes and limited life component exchanges

Response:
Accept Added "recodes" and "limited life component exchanges".

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov
Before, this section had NEWS and now has nuclear explosive design, NEOs ....evaluations. I do notsee the value of the change from NEWS to a list of activities.

Response:
Accept

Changed as follows:

Departmental Elements. This Order applies to NNSA which is the only Departmental element that is involved in performing, managing, overseeing, and directly supporting the nuclear explosive and weapon surety program and associated activities.

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 3.a. - The web site referenced in the first paragraph is no longer accessible.

Response:
Accept Website reference deleted.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME Eric.Mulch@hq.doe.gov

Suggest repeating the responsibilities in b.(3) in the responsibilities paragraph of the Order.

Response:
Accept Added b.(3) responsibility to Field Office Manager responsibility in Section 5.f.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME christina.pak@hq.doe.gov
Delete reference to Office of Civilian Radioactive Waste Management, since the office no longer exists.

Response:
Accept Deleted exclusion paragraph (1) because the directive only applies to NNSA.

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 3.c.(1) - Some of the organizations listed in this paragraph no longer exist or their names have changed.

Response:
Accept

Section 3.c.(1) was deleted because the directive only applies to NNSA. The Applicability section was also revised to reflect this fact.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME Eric.Mulch@hq.doe.gov

This is an equivalency not an exclusion.

Response:
Accept

Created "Equivalency" paragraph and moved this paragraph to that section.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please change the reference to DOE O 420.1 to read as follows: "DOE O 420.1C, *Facility Safety."*

Response:
Accept "DOE O 420.1" changed to "DOE O 420.1C, *Facility Safety*".

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME ROGERSKY@NV.DOE.GOV
Suggest that another qualifier be added that "if activities have the ability to affect nuclear explosive operations that those be within the scope of the order". At the NNSS we have operations that are within close proximity that might have the ability to impact a nuclear explosive operation that are not part of the operation specifically.

Response:
Accept with Modifications

That was the intent of adding the last sentence in this paragraph. Changed the last sentence to be more clear.

However, if critical assembly operations have the potential to affect nuclear explosive operations (i.e. are in close proximity to one another), then those operations are within the scope of this order.

4. REQUIREMENTS

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.a (1) and (2) and Att 1, 2.a. and 2.b.

[C] As written, it is possible that the two positive measures chosen for a given scenario in section 4.a. (1) and (2) are administrative controls. Reliance on two administrative controls for prevention of IND/HEVR is not acceptable.

[S] Add language on the preferential selection of engineered controls, design features, etc., as a positive measure, and the prohibition against selecting two administrative controls for a single scenario.

Response:
Accept with Modifications

Added the following paragraph on the heirarchy of controls (Sections 4.c(4) and CRD 4.d):

Hierarchy of positive measures. Engineered positive measures, such as design features, are preferential to positive measures which are administrative only. Passive engineered positive measures are preferential to active ones. Unless impossible or impractical, engineered positive measures will be in place to prevent NES consequences.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] In the term "initial positive measure," the word "initial" is confusing and could be construed ambiguously.

[S] Delete the word "initial."

Response:
Accept Deleted "initial" from 4.a(1) and Attachment 1, 2.a.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "effectively interrupt" must be defined. Both "effective" and "interrupt" are ambiguous in this context.

[S] Use the word "prevent" as in 4.a (3) through (6). Otherwise, describe the level of reliability expected for a control to be "effective" and define "effectively interrupt" the same as "prevent" in 4.b (1).

Response:
Accept Added the following paragraph 4.c(5) and CRD 4.e:

Effectively interrupt" means that each sequence of credible causes and effects that begins with an initiating event and eventually leads to the NES consequence, is prevented or stopped at some point, so that the NES consequence does not occur. Similar to 3a above, prevention of unintended/unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that potentially leads to a NES consequence.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "credible," if used, needs to be defined. "Credible" is ambiguous in this context, and might become the subject of endless debate.

[S] Delete the term "credible."

Response:
Reject A lengthy discussion on the term "credible scenario" is included in NA SD 452.2. It is not necessary to repeat it here.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "events" needs to be defined. "Events" is ambiguous in this context, and might become the subject of endless debate.

[S] Delete the term "events."

Response:
Accept with Modifications

Added pragraph 4.c(5) and CRD 4.e to address "initiating events".

"Effectively interrupt" means that the chain of sequential events that must happen between the

initiating event and the NES consequence are stopped at some point after the initiating event and prior to the NES consequence. Similar to 4b(1) above, prevention of unintended /unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. The objective is to drive the likelihood of the specified consequences as low as reasonably practicable. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that leads to an adverse environment.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] Using "effectively interrupt each credible chain of events" is inconsistent with sections 4.a (4) through (6). It is also a large deviation from previous standards that define the scenario as "interrupt accidents, inadvertent acts, or unauthorized activities."

[S] Replace "effectively interrupt each credible chain of events" with "interrupt accidents, inadvertent acts, or unauthorized activities."

Response:
Reject NESSG's are not typically adverse to endless debate. Leaving the wording of the use control and design surety standards the same was intentional. The positive measures in the first and second standard are primarily focused on operational controls not weapon design. Basic NES philosophy is to put in controls to prevent environments where the weapon must protect itself (i.e. prevent the accident). With the 5th and 6th standards, we want to put in controls that protect the weapon after the accident happens.

DNFSB Comments for 4.a (2) and Att 1, 2.b.

[C] The term "if the first measure fails" needs to be defined, discussed, or replaced with a better term.

[S] Replace "if the first measure fails" with the phrase used in all previous revisions of the order, "given an accident or inadvertent act."

Response:
Reject

Changing back to the words "given an accident..." is not acceptable. It leaves open the interpretation, "given an HEVR"...which would only occur if the NES controls have been defeated.

DNFSB Comments for 4.a (5) and Att 1, 2.e.

[C] The term "given an adverse environment or unauthorized act" is used correctly, but is inconsistent with the term used in 4.a (1) and (2).

[S] Use the same term in 4.a (1) and (2) or use a term here that is consistent with whatever term is used there.

Response:
Reject The decision to not alter the design standards was a deliberate one. The 1st and 2nd standards are written to be specific to positive measures in place outside the nuclear explosive. The 5th and 6th standards are intended to apply to features within the weapon. The language on preventing the sequence of events, as written, does not directly apply to weapon design features.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME pasena@sandia.gov

Standards 1 - 4: I do not concur with the change from "controls" tp "positive measures". This change is significant because it downgrades the effort NES Standards from a firts principles approach to a probabilistic approach. The existing standard is a much more stringent and objective standard and the new standard, which includes administrative measures, are much softer and subjective. The text in one location implies a single positive measure coupld be

implemented and in another location, it implies multiple measures are required.

Standard 1: The term "effectively interrupt" could be interpretted different ways.

Standards 5-6: These standanrds are not achievable given the budgets and scope associated with the ALTs and LEPs being performed.

Response:
Accept with Modifications

The change from "controls" to "positive measures" is semantics only. It does not downgrade the efforts of NES Standards. NES remains a first principles approach and is a qualitative approach not a probabalistic approach. There has been confusion in the past both within the NESSG community and the AB community with use of the term "controls" and "credited controls" and "TSR controls". For instance, their are many NES controls including the NES rules which are not credited as TSR controls. This has led to some very confusing conversations between NESSGs and Safety Basis personnel.

The current NES standards in DOE O 452.1D do NOT prohibit Adminstrative Controls from being credited for meeting the NES standards. Hierarchy of controls is taught in the NSTE 270 Course (NES Orientation). However, per a comment from the DPC, I added the following paragraph on hierarchy of positive measures to both the directive and the CRD:

Hierarchy of Positive Measures. Engineered positive measures, such as design features, are preferential to positive measures which are administrative only. Passive engineered positive measures are preferential to active ones. Unless impossible or impractical, engineered positive measures will be in place to prevent NES consequences.

Therefore, the changes in this directive enhance and strenghten NES, not weaken it.

"Design features" here refers to engineered "controls" for operations not weapon safety features. The definition of positive measures was also changed to elimiate weapon safety features as positive measures for the purposes of NES evaluation.

The following paragraph was added to explain "effectively interrupt":

"Effectively interrupt" means that each sequence of credible causes and effects that begins with an initiating event and eventually leads to the NES consequence, is prevented or stopped at some point, so that the NES consequence does not occur. Similar to 3a above, prevention of unintended/unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that potentially leads to a NES consequence.

With the exception of changing the term "nuclear detonation" to "nuclear explosive detonation", which doesn't change the intent, the 5th and 6th Surety Standards are the same as they are listed in the current version of DOE O 452.2D. If you believe that SNL is unable to meet the current requirements for a current refurbishment (LEP?), then we will need to discuss this with NA-12, NA-10, and NA-SH.

SME llluna@sandia.gov

I do not concur with the changes to Nuclear Explosive Standards (1), (2) or (5).

For (1) This moves from a First Prnciples approach to nuclear safety to a more probablistic approach. The previous standard required elimination of a hazard or threat to a nuclear explosive. The new standard uses a proablisitic approach in which a single positive measure is implmented early in a "credible accident chain" to break the chain of events. The definition of 'credible" can vary.

This single positive measure can be administrative instead of engineered.

This approach can rely on a single positive measure rather than eliminating hazards.

For (2) This changes from a basic approach requiring the weapon to remain safe given a hazard or threat, to one requiring a second positive measure later in a "credible" chain of events.

This measure can also be administrative, rather than engineered.

For both, Unauthorized acts have been removed and must be considered. This includes

unintentional unauthorized acts.

The two new standards do not require independence bretween the meaures. There is a subsequent statement tht mentions independence, but independence is not defined. The definition of independence must address common-mode and common-cause failures or the positive measures credited for nuclear safety to assure that one threat cannot defeat all positive measures.

In (5) the use of "nuclear explosive detonation" rather than "nuclear detonation" is a departure from the long-standing Walske guidance in his march 14, 1968 memo. That memo specifically states "nuclear detonation". Any departure from Walske must be carefully considered. This change occurs in many places throughout this document and I do not concur with any of them.

Response:
Accept with Modifications

The changes do not move to a more probabilistic approach. Elimination of a hazard is preferable, if possible and practical. The current standards make no reference to elimination of hazards. That philosophy is a basic premise of safety. The new standards do not change that. The general NESRs (DOE O 452.2) refer to elimination of certain hazards, and that has not changed.

The current NES standards do not prevent use of administrative controls to meet the standards. However, a paragraph on Hierarchy of positive measures has been added.

The following sentence was added to address "unauthorized acts":

As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that potentially leads to a NES consequence.

The new standards do require independence. "Independence" added to 2nd Standard:

For all nuclear explosive operations, there must be a second positive independent measure that will effectively interrupt each credible chain of events given the first measure fails.

This order applies only to US nuclear explosives within the custody of DOE/NNSA. The current definition of "nuclear detonation", if taken literally, could have applied to past nuclear criticality accidents and future critical assemblies, which was never the intention. The change to "nuclear explosive detonation" was made to make it clear that the scope of this order only includes nuclear explosives.

SME robbins12@llnl.gov

This NNSA proposed change to the NES standards (1) and (2) will reduce the standard of safety for our NEOs. The philosophy of both preventing the adverse environment and preventing the NES consequence given the adverse environment has been the cornerstone of nuclear explosive safety since the NES standards were first published in 1963. While the order still references this philosophy, the requirement to meet these criteria has been removed. The proposed change makes it difficult for NESSGs to write findings against processes that do not follow this philosophy and even if findings are created, it is easy for management to brush these aside when the requirements are met. As such, implementing the new requirements will result in reductions to the required level of safety of our NEOs.

I can appreciate the desire to make the current requirements more clear cut and agree the proposed change does make it easier to determine when the standard is met. In addition, there may be cases where it is not feasible to meet both current 1st and 2nd standard. However, the right solution is to allow for reasonable exceptions when necessary, not lowering the bar for all situations. We rely on the NESSG for their expert judgment; provide additional guidance as needed to help interpret the current standards, especially for the situations when there is really nothing more that can be reasonably done, as opposed to lowering the standard.

Additionally, this change in requirement blurs line between historic NESSG

concerns and the Authorization Basis criteria established by 10CFR830 – where the differences in safety approach have long been recognized to positively enhance safety of a business where a failure is catastrophic. We do not want the NESSG to merely count up controls to determine safety - that is already being done. As an additional point of reference, the United Kingdom requires three Lines of Defense with proven failure rates to less than one in 1000 in order to preclude Inadvertent Nuclear Detonation in their NEOs. I cannot fathom why NNSA would think two positive measures, of subjective quality, is by any means adequate.

LLNL requests removal of the proposed change to NES Standards (1) and (2).

Response:
Reject

The proposed changes to the NES Standards will not reduce the standard of safety for our NEOs.

I appreciate your concerns. Any NES deficiency can be written as a finding. However, if two indenpendent positive measures (or controls, if you prefer) are in place that effectively prevent a NES consequence (IND or HEVR), then the first and second standard are met. The finding must still be acted upon, however, the standards are met.

Jennifer Bitsie for Sandia Field Office

Comment clarification from Jody Pugh, SFO:
1a. A concern with a change in the standard. Authorization Basis reviews the controls and NESS reviews the weapon at a system level (not just individual controls). The revision appears to reduce the NESS review to individual controls (or positive measures as stated in Rev 1.E).

SNL Comment: Standards 1 - 4: I do not concur with the change from "controls" tp "positive measures". This change is significant because it downgrades the effort NES Standards from a firts principles approach to a probabilistic approach. The existing standard is a much more stringent and objective standard and the new standard, which includes administrative measures, are much softer and subjective. The text in one location implies a single positive measure coupld be implemented and in another location, it implies multiple measures are required.

Standard 1: The term "effectively interrupt" could be interpretted different ways.

Standards 5-6: These standanrds are not achievable given the budgets and scope associated with the ALTs and LEPs being performed.

Response:
Accept with Modifications

The change from "controls" to "positive measures" is semantics only. It does not downgrade the efforts of NES Standards. NES remains a first principles approach and is a qualitative approach not a probabalistic approach. There has been confusion in the past both within the NESSG community and the AB community with use of the term "controls" and "credited controls" and "TSR controls". For instance, their are many NES controls including the NES rules which are not credited as TSR controls. This has led to some very confusing conversations between NESSGs and Safety Basis personnel.

The current NES standards in DOE O 452.1D do NOT prohibit Adminstrative Controls from being credited for meeting the NES standards. Hierarchy of controls is taught in the NSTE 270 Course (NES Orientation). However, per a comment from the DPC, I added the following paragraph on hierarchy of positive measures to both the directive and the CRD:

Hierarchy of Positive Measures. Engineered positive measures, such as design features, are preferential to positive measures which are administrative only. Passive engineered positive measures are preferential to active ones. Unless impossible or impractical, engineered positive measures will be in place to prevent NES consequences.

Therefore, the changes in this directive enhance and strenghten NES, not weaken it.

"Design features" here refers to engineered "controls" for operations not weapon safety features. The definition of positive measures was also changed to elimiate weapon safety features as positive measures for the purposes of NES evaluation.

The following paragraph was added to explain "effectively interrupt":

Jennifer Bitsie for Sandia Field Office

Comment clarification from Jody Pugh, SFO:

The Walske memo sets the standards jointly with DoD for Nuclear Safety.

Multiple places in Rev 1.E terminology is not consistent with the Walske memo.

1.a The Walske memo calls out

Nuclear Detonation. Rev 1.E changes Nuclear Detonation to Nuclear Explosive

Detonation (which would not include a criticality event).

1.b Shall
has been changed to desirable throughout the

Rev 1.E

1.c One
point safety should

apply in all environments per the Walske memo. Per Rev 1.E one point safety

should apply only in "otherwise normal environments" or
"credible

environments". "Otherwise normal environments" and
"credible" is not used to

describe environments and not defined.

SNL Comment: I do not concur with the changes to Nuclear Explosive Standards (1), (2) or (5).

For (1)
This moves from a First Principles approach to nuclear safety to a more probabilistic approach. The previous standard required elimination of a hazard or threat to a nuclear explosive. The new standard uses a probabilistic approach in which a single positive measure is implemented early in a "credible accident chain" to break the chain of events. The definition of 'credible" can vary.

This single
positive measure can be administrative instead of engineered.

This
approach can rely on a single positive measure rather than eliminating hazards.

For (2)
This changes from a basic approach requiring the weapon to remain safe given a hazard or threat, to one requiring a second positive measure later in a "credible" chain of events.

This
measure can also be administrative, rather than engineered.

For both,
Unauthorized acts have been removed and must be considered. This includes unintentional unauthorized acts.

The two new
standards do not require independence between the measures. There is a subsequent statement that mentions independence, but independence is not defined. The definition of independence must address common-mode and common-cause failures or the positive measures credited for nuclear safety to assure that one threat cannot defeat all positive measures.

In (5) the
use of "nuclear explosive detonation" rather than "nuclear detonation" is a departure from the long-standing Walske guidance in his march 14, 1968 memo. That memo specifically states "nuclear detonation". Any departure from Walske must be carefully considered. This change occurs in many places throughout this document and I do not concur with any of them.

Response:
Accept with Modifications

This order applies only to US nuclear explosives within the custody of DOE/NNSA. The current definition of "nuclear detonation", if taken literally, could have applied to past nuclear criticality accidents and future critical assemblies, which was never the intention. The change to "nuclear explosive detonation" was made to make it clear that the scope of this order only includes nuclear explosives.

"Shall" has been changed to "must", not "desirable" as required by recent DOE directive requirements. The term "must" indicates a requirement. The term "desirable" was added to refer to where the application of controls is to preferetially be in an accident chain of events.

One point safety requirement changed to the following:

One-Point Safety. Nuclear explosives must be designed to be one-point safe without the use of a safing device (i.e. inherently one-point safe). The probability of achieving a nuclear yield greater than four (4) pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME robbins12@llnl.gov

The change to the NES standards, which by extension necessitated the removal of several sentences in this section, highlights how the proposed change completely changes the application and intent of the standards (the title of 4.b.), I believe at the expense of safety.

LLNL suggests restoring the NES Standards along with the explanation in this section of their Application and Intent.

Response:
Reject Discussed in other comments above.

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.c (1)

[C] "The chain" referred to here may be the same "chain of credible events" referred to in 4.a (1), but it is not clear.

[S] Use consistent terminology throughout the Order. Throughout the order replace "credible chain of events", "chains," and "credible scenarios" with "accidents, inadvertent acts, or unauthorized activities."

Response:
Accept with Modifications

Changed "chain" to "chain of events" in 4c(1) and CRD 4a.

Added the folloiwng paragraph, 4c(5) and CRD 4e.

"Effectively interrupt" means that each sequence of credible causes and effects that begins with an initiating event and eventually leads to the NES consequence, is prevented or stopped at some point, so that the NES consequence does not occur. Similar to 4b(1) above, prevention of unintended/unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that potentially leads to a NES consequence.

"Unauthrorized (non-malevolent) acts" includes "inadvertent acts".

This should be clear.

DNFSB Comments for 4.c (1)

[C] "Credible scenario" referred to here may be the same "chain of credible events" used previously, but it is not clear.

[S] Use consistent terminology throughout the Order. Throughout the order replace "credible chain of events", "chains," and "credible scenarios" with "accidents, inadvertent acts, or unauthorized activities."

Response:
Accept with Modifications

Changed "...credible scenario..." to "...credible scenario (chain of events)..." in 4c(1) and CRD 4a.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov

Please change the end of item (1) to read as follows: "detonation or main charge High-Explosive Violent Reaction (HEVR)."

Response:
Accept

(HEVR) added and changed to upper case.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO:

1a. Change in terminology from "controls" to "positive measures". If they are the same thing, why change the terminology. If not, define how they are different. Rev 1.E states that administrative controls and design features are acceptable positive measures.

1b. Text on page 5; 4c(2) states that a single positive measure could be implemented. Text on page 3; 4a(1) & (2) states that multiple measures are required.

SNL COMMENT: Define Authorizing Official.

"If 4a(2) above is not met..." Is this for operations to be evaluated in the future or for existing operations that will have to be evaluated when this Order becomes effective?

c.(1) Reword to say: "However, satisfaction of the NESS...two independent positive measures TO INTERRUPT each credible CHAIN OF EVENTS..."

Response:
Accept with Modifications

The change from "controls" to "positive measures" is semantics only. It does not downgrade the efforts of NES Standards. NES remains a first principles approach and is a qualitative approach not a probabalistic approach. There has been confusion in the past both within the NESSG community and the AB community with use of the term "controls" and "credited controls" and "TSR controls". For instance, their are many NES controls including the NES rules which are not credited as TSR controls. This has led to some very confusing conversations between NESSGs and Safety Basis personnel.

Paragraphy 4c(2) states:

The term "positive measure" as used in paragraphs 4a(1) and (2) above may refer to a single positive measure or a suite of positive measures. A single positive measure meets the requirement of 4a(1) or (2) above if that positive measure can by itself break the chain of events. A suite of positive measures (two or more) are necessary if the positive measures are dependent on each other to break the chain of events at a single point in the scenario.

This paragraph does not state that a single positive measure can meet both the 1st and 2nd standard.

Changed 4c(1) sentence to read:

However, satisfaction of the NES Standards is achieved by having at least two independent positive measures to interrupt each credible scenario (chain of events) that could lead to nuclear explosive detonation or main charge HEVR.

SME pasena@sandia.gov

Define Authorizing Official.

"If 4a(2) above is not met..." Is this for operations to be evaluated in the future or for existing operations that will have to be evaluated when this Order becomes effective?

c.(1) Reword to say: "However, satisfaction of the NESS...two independent positive measures TO INTERRUPT each credible CHAIN OF EVENTS..."

Response:
Accept with Modifications

Authorizing Official is the NNSA line manager who authorizing nuclear explosive operations for that NNSA site. For Pantex, that would be the NPO Manager. For OST, that would be the Assistant Deputy Administrator for Secure Transportation.

Changed 4c(1) sentence to read:

However, satisfaction of the NES Standards is achieved by having at least two independent positive measures to interrupt each credible scenario (chain of events) that could lead to nuclear explosive detonation or main charge HEVR.

The Order applies to all NNSA Nuclear Explosive Operations. There is no intention of conducting new evaluations of existing operations. All operations conducted have already been evaluated to the NES standards. If they could not meet these new NES standards, then they could not have met the current NES standards either. Because we have no open pre-start (or Category A) findings, it is appropriate to conclude that the existing operations, which have all been evaluated by a NESSG meet the NES Standards.

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO:

1a. First Principles approach to nuclear safety are to design safety in
so the weapon is inherently safe. The Rev 1.E changes the terminology of
"controls" to "positive measures" but does not address the independence between
the measures which are necessary for those controls to be effective.

1b. Unauthorized Acts have been removed from the Rev 1.E.

SNL COMMENT: It is hard to see how "adequate nuclear safety can be acheived by other means". The NESSG must agree with this and it must be noted in the NESS report before the Undersecretary for Nuclear Security reviews the proposal. This ensures a thorough technical review for the Undersecretary to consider.

This paragraph only applies to the revised standard. If the standard is not changed, it can be deleted.

If the new standard is kept, both occurences of "desireable" must be changed to "shalls" Otherwise there is no requirement to make them early or to have multiple positive measures.

Independence must be defined to be "not subject to common mode or common cause failures" and that both postive measures must be engineered.

Response:
Accept with Modifications

4a(2) changed to the following:

For all nuclear explosive operations, there must be a second positive independent measure that will effectively interrupt each credible chain of events given the first measure fails.

The following paragraph was added to explain "effectively interrupt" which not includes the term "unauthorized acts":

"Effectively interrupt" means that each sequence of credible causes and effects that begins with an initiating event and eventually leads to the NES consequence, is prevented or stopped at some point, so that the NES consequence does not occur. Similar to 3a above, prevention of unintended/unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that potentially leads to a NES consequence.

The current NES Standards in DOE O 452.2D do not require that controls to be engineered. However, that is clearly preferable, so the following paragraph on hierarchy of postive measures was added:

Hierarchy of Positive Measures. Engineered positive measures, such as design features, are preferential to positive measures which are administrative only. Passive engineered positive measures are preferential to active ones. Unless impossible or impractical, engineered positive measures will be in place to prevent NES consequences.

SME llluna@sandia.gov

It is hard to see how "adequate nuclear safety can be acheived by other means". The NESSG must agree with this and it must be noted in the NESS report before the Undersecretary for Nuclear Security reviews the proposal. This ensures a thorough technical review for the Undersectretary to consider.

This paragraph only applies to the revised standard. If the standard is not changed, it can be deleted.

If the new standard is kept, both occurenes of "desireable" must be changed to "shalls" Otherwise there is no requirement to make them early or to have multiple positive measures.

Independence must be defined to be "not subject to common mode or common cause failures" and that both postivie measues must be engineered.

Response:
Reject

This decision would likely be made after the NESSG had adjourned.

As stated, it is desirable to have them as early as possible in the scenario. To meet both standards, there must be a minimum of two idenpendent positive measures.

Hierarchy of Positive Measures paragraph added.

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise

Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 4.c.(1) - The acronym HEVR is not defined on first use in the last sentence of this paragraph and is not used in the directive except within its definition in section 6.

Response:
Accept Added HEVR in 4c(1).

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov
It is not clear from the wording that the postive measure for the first standard must be different from the one for the second standard. The two must be different and break the chain in two different and widely separated times in the specific portion of the process.

Response:
Reject

The 2nd NES standard clearly states that a second positive measure must be included.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please change the title of DOE O 452.4B to the following: "*Security and Use Control of Nuclear Explosives and Nuclear Weapons.*"

Response:
Accept

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please spell out the title to "D&P Manual" the first time it is used and include it in the list of references at the end of the Order.

Response:
Accept

Added D&P acronmym.

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME pasena@sandia.gov
f. Reword to say " ...must be met to support safe and SECURE..."

Response:
Accept Added "secure".

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise

Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 4.f. - The acronym D&P is not defined.

Response:
Accept Added "Development and Production (D&P)".

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.f (3)(a)3 and Att 1, 7.c.(1)(c)

[C] Addition of the phrase "in an otherwise normal environment" is inconsistent will all historical understanding of one-point safety and current requirements in DOE and DoD.

[S] Delete the phrase "in an otherwise normal environment." Also delete the entire sentence that immediately follows this phrase on page 6: "It is desirable that the probability of achieving a nuclear yield greater than 4 pounds TNT equivalent in the event of a one-point initiation of the nuclear explosive's high explosive in credible combined abnormal environments to be less than one in a million." Preserve the historic definition of one-point safety.

Response:
Accept with Modifications

Changed as follows:

One-Point Safety. Nuclear explosives must be designed to be one-point safe without the use of a safing device (i.e. inherently one-point safe). The probability of achieving a nuclear yield greater than four (4) pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME Stephen.Smith@hq.doe.gov
Is it necessary to explain any further how the "one-in-a-million" probability is to be achieved?

Response:
Reject No.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME robbins12@llnl.gov

With respect to the One Point Safety Criterion, what we want is OPS for all creditable environments. It does not make sense to change the OPS requirement to specify "normal" or "abnormal" environments because by definition, the situation only occurs in an abnormal environment. Hence, it is always abnormal, never normal. The attempted additional explanation only obfuscates the intent...that US nuclear weapons shall be one point safe (period).

Furthermore, including the word, "credible" is not useful, because "credible" is not a quantifiable amount. What is credible to you may be non-credible to me. Thus the phrase "credible combined abnormal environment" is vague and will likely cause confusion.

There will always be challenges and new scenarios to evaluate, but that's what the design agencies are here for. You can't get a robot to do this work. You need someone to look at each situation, think about it, and make an assessment, where sometimes the assessments require calculations.

Adding the part about "without a safing device" is not needed and will likely also cause confusion in some other scenarios. The phrase, "inherently safe" means just that, inherently, which means without a safing device. So the statement is redundant.

Sometimes more is not better. In this case, less words, and in fact the original words, are the best. The recommendation from both the LLNL NESSG and the physicist who have spent decades performing these types of assessments, is to let stand the original wording of the 1968 Walske criterion.

Response:
Accept with Modifications

Changed to the following:

One-Point Safety. Nuclear explosives must be designed to be one-point safe without the use of a safing device (i.e. inherently one-point safe). The probability of achieving a nuclear yield greater than four (4) pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

SME llluna@sandia.gov

I do not concur with the use of the language "Otherwise normal environment". It should be deleted. The idea of one-point safety is to prevent nuclear yield in Abnormal environments. The "It is desirealbe" statement should be removed as well. This is a "shall". The basic requirement for all nuclear weapons is a guarantee that there will not be more that 4 lbs equivalent TNT yield in any abnormal environments with a one in a million probability. Thiis flows from Walkse and is a long stading cornerstone of nuclear weapon safety. It is part of the one in a million abnormal environment requirement in Walkse. Also, crefile should be removed as Walske does not specify credible.

The new wording is a signifigant change in nuclear safety requirements.

Response:
Accept with Modifications

Changed to the following:

One-Point Safety. Nuclear explosives must be designed to be one-point safe without the use of a safing device (i.e. inherently one-point safe). The probability of achieving a nuclear yield greater than four (4) pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a. Rev 1.E has added that adequate nuclear safety can be "achieved by
other means." It does not state what an acceptable "other means" would be.

1b. The only approval needed for an "other means" is the Undersecretary
for Nuclear Security. Previous versions
require the Secretary of the Department of Energy and the Secretary of the
Department of Defense.

SNL COMMENT: I do not concur with the use of the language "Otherwise normal environment". It should be deleted. The idea of one-point safety is to prevent nuclear yield in Abnormal environments. The "It is desireable" statement should be removed as well. This is a "shall". The basic requirement for all nuclear weapons is a guarantee that there will not be more that 4 lbs equivalent TNT yield in any abnormal environments with a one in a million probability. This flows from Walske and is a long stading cornerstone ofnuclear weapon safety. It is part of the one in a million abnormal environment requirement in Walske. Also, crefile should be removed as Walske does not specify credible.

The new wording is a signifigant change in nuclear safety requirements.

Response:
Accept with Modifications

"other means" is not defined. It would be up to the Undersecretary to decide if other means are acceptable.

The Secretary of DoD has not been required if a NES Standard has not been met for DOE operations.

One-Point Safety. Nuclear explosives must be designed to be one-point safe without the use of a safing device (i.e. inherently one-point safe). The probability of achieving a nuclear yield greater than four (4) pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov

This section should retain the lanuage of the previos version which requires "overriding reasons for not doing so and explicitly documented agreements to this effect are reached by the Secretary of Energy and the Secretary of Defense. Given the conversations around the recent LEPS and ALTs, I think this would be a good idea.

Response:
Reject

DOE O 452.2D does not require DoD approval for NNSA NEO's that do not meet the NES Standards. I think maybe you meant to refer to the Weapon Design Surety Section?

In which case, the language was changed to match how the process actually occurs. This was discussed during the Top Down Review.

SME ROGERSKY@NV.DOE.GOV

Suggest that a statement clarifying that this is for a "full up intact" unit and does not apply if a unit has been exposed to an abnormal environment unless the intent is for that to be true.

Response:
Reject "full up intact" in redundant with nuclear weapons. However, the FMD statement applies to credible abnormal environments.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO:
1a. No identification of Authorizing Official (s) at the beginning of the Order.

1b. No definition of Authorizing Official in the definition section.

1c. Do existing operations have to be evaluated per the revision or just future operations?

SNL COMMENT: The previous version required specific approval from the Secretaries of the DOE and DOD if this could not be met. It should be put back in.

Response:
Reject Addressed in previous SNL comments above.

SME llluna@sandia.gov
The previous version required specific approval from the Secretaries of the DOE and DOD if this could not be met. It should be put back in.

Response:
Reject This was discussed in the TDR, and the agreement with the design agencies was to include the process as it actually occurs. Please contact Dan Bruns (NA-121.1) if you have further questions.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In item 2, please change "will" to "must."

Response:
Accept Changed "will" to "must".

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME pasena@sandia.gov
(c) Comment: We can't meet this "must" with currently defined project scopes for LEPs and ALTs.

Response:
Reject Please discuss with NA-12.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In items (d) and (e), please change "will" to "must" the 3 times "will" is used.

Response:
Accept

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME pasena@sandia.gov
(e) Comment: We can't meet this "will" with currently defined project scopes for the LEPs and ALTs.

Response:
Reject

SME llluna@sandia.gov
In paragraph (e) add the requirement for less than 4 lbs TNT equivalent yield with a probablility of one in a million. This is the same requirement on one-point safety above in 4.f.(3)3. As this is a safety requirement,it should meet the long-standing 4 lbs limit for nuclear yield with the safety device installed.

Response:
Reject

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please delete item (3)(e)--it is not on the DOE Directives page.

Response:
Accept Deleted 3(e).

Major comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME amacdougall@ntc.doe.gov wrote:

- Line (3) d -change date for DOE O 426.1 change 1 to 9-20-11 -- this is the correct date for the Change 1 to the order and not the date referenced which is 11-19-09.

- Line (3) e - Delete the reference to Manual 426 in this line -- the manual was cancelled and archived as part of change 1 to 0426. 1 approved on 9-20-11. Any necessary requirements in the manual were incorporated into the DOE O 426.1 change 1 and DOE O 426.2 which are already referenced in this section.

Response:
Accept

Changed the date on DOE O 426.1 to 9-20-11.

Deleted 4.i(3)(e).

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 4.i.(3)(e) - There is no such manual. DOE M 426.1-1A was cancelled by DOE Order 426.1 and no successor version was issued.

Response:
Accept Deleted 4.i.(3)(e).

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please change "DOE O 243.1" to "DOE O 243.1B" and change the date for the Order to "3-11-2013."

Response:
Accept Changed "DOE O 243.1" to "DOE O 243.1B" and changed the date for the Order to "3-11-13."

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 4.k. - The version of the Records Management directive referenced in this section differs from that in section 7.

Response:
Accept Changed "DOE O 243.1" to "DOE O 243.1B" and changed the date for the Order to "3-11-13."

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov

I think that (1) is incorrect. This is a substantial programmatic change, especially the new NESS standards. If these are implemented, there will be significant time required to research and document all potntial accident chains, then verify that there are two positive measures in place for each of them. It will also take time to assure independence and the spacing of the controls.

Response:
Reject

There is no added requirement to document potential accident chains. The existing NES standards in DOE O 452.2D require positive measures to be in place to prevent the accident, and prevent IND and HED/D given the accident. It can be logically inferred that there must be a least two independent controls to meet the current NES standards. Therefore, if a scenario exists that doesn't meet the new standards, then it cannot meet the current ones either.

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO:
1a. Page 6; 4.f.3.a.3 One-Point Safety; Revision states "otherwise normal environment", previous versions state in all environments.

1b. Shall has been changed to desirable for not achieving yield greater than 4 pounds TNT.

1c. Rev 1.E states "credible combined abnormal environments" but credible is not defined.

SNL COMMENT: I think that (1) is incorrect. This is a substantial programmatic change, especially the new NESS standards. If these are implemented, there will be significant time required to research and document all potntial accident chains, then verify that there are two positive measures in place for each of them. It will also take time to assure independence and the spacing of the controls.

Response:
Accept with Modifications Addressed in previous SNL comments above.

5. RESPONSIBILITIES

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In item (2), please change "Perform" to "Performs."

Response:
Accept Changed "Perform" to "Performs".

6. DEFINITIONS

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME William.Pulse@nnsa.doe.gov
A definition of "credible" or "credibility of scenario" should be provided to ensure a common understanding of a new concept.

Response:
Reject

"Scenario Credibility" is discussed in depth in NA SD 452.2.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

Linell Carter for Pantex - BWXT Pantex, LLC

6.i The definition for High-Explosive Violent Reaction (HEVR) should be simplified to remain consistent with existing definitions for HE detonation/deflagration. The definition should be rewritten as follows: "For the purposes of the nuclear explosive and weapon surety directives, an HEVR is high explosive detonation or high explosive deflagration of the main charge high explosive".

Response:
Accept with Modifications Changed to match the definition used in weapon response for HEVR.

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME robbins12@llnl.gov
Good definition of HEVR for the purposes of nuclear explosive and weapon surety directives. Please do not change it.
SME llluna@sandia.gov

On item k, add the requirement that a detonation cannot exceed 4 lbs TNT equivalent with a probability of 1 in a million as listed in the multipoint section above.

Response:
Reject I can discuss this with you further why we cannot do this in a closed forum. Please contact me.

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov
Add or "or greater than" after "equivalent to"

Response:
Reject

Adding "or greater than" would be redundant to "four (4) or more".

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 6.w

[C] Adding "in otherwise normal environments" to the definition of one-point safety is inconsistent and incorrect. The key nuclear safety criteria have always been:

1. Nuclear safety is to be given first priority when conflicting requirements are encountered.

2. Probability of nuclear yield [> 4lb TNT equivalent] in the event of any one-point initiation of the HE system shall not exceed 1 in 106.

3. Prior to receipt of enabling stimuli, probability of a nuclear detonation shall not exceed, in normal environments, 1 in 109 per weapon lifetime.

4. Prior to receipt of enabling stimuli, the probability of a nuclear detonation shall not exceed, in abnormal environments, 1 in 106 per weapon accident of exposure.

(Source document for #3 and #4: The "Walske Letter," 14 MAR 68)

One-point safety is a subset of safety in abnormal environments. Therefore, the addition of the "in otherwise normal environments" caveat to the definition in 6.w. is incorrect.

[S] Delete definition 6.w. or delete "in otherwise normal environments."

Response:
Accept with Modifications

Changed to the following:

The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge

high explosive must not exceed one in a million (1E-06).

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov

for definition w, suggest adding the requirement to not exceed 4 lbs TNT equivalent yeild with a probablility of one in a million as listed above for one point safety.

Also for w, (major), remove the "in otherwise normal environments". This requirement applies in all environmnets as per the Walske letter.

continuint for w (major) one point safety does not prevent or mitigate. This is a design requirement that is built into the weapon. Prevent or mitigate implies that this is a function of an external component rather than a design requirement.

Response:
Accept with Modifications

Changed to the following:

The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

SME robbins12@llnl.gov

The proposed definition for one point safety is not acceptable.

One-Point safety is a positive measure that meets the requirement of DOE O 452.1D 4.f.(3)(a)3 and is a property inherent to the design of the nuclear explosive. One point safety has meant one thing for many years. The proposed changes to the one point safety requirements will cause confusion.

Response:
Accept

Changed to the following:

The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a. The previous version required specific approval from the Secretaries of the DOE and the DoD if this could not be met. This has been removed.

SNL COMMENT:

for definition w, suggest adding the requirement to not exceed 4 lbs TNT equivalent yield with a probablility of one in a million as listed above for one point safety.

Also for w, (major), remove the "in otherwise normal environments". This requirement applies in all environments as per the Walske letter.

continuint for w (major) one point safety does not prevent or mitigate. This is a design requirement that is built into the weapon. Prevent or mitigate implies that this is a function of an external component rather than a design requirement.

Response:
Accept with Modifications

Changed to the following:

One-Point Safety. The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME William.Pulse@nnsa.doe.gov
The use of "otherwise normal environments" in the "One-Point Safety" definition is unclear as it could imply that One-Point Safety only applies to "abnormal environments" Recommend that examples be provided in the definition to clarify what is meant by "otherwise normal environments.

Response:
Accept with Modifications

Changed to the following:

One-Point Safety. The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 6.w. - There appears to be an extraneous word (within/of?).

Response:
Accept

Changed to the following:

The nuclear safety design principle that states that the probability of achieving a nuclear yield greater than 4 pounds of TNT equivalent in the event of a one-point initiation of the main charge high explosive must not exceed one in a million (1E-06).

Major comment from Cathy Tullis for Headquarters NA

Included comments:

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a. Sandia will have substantial programmatic change with this newRevision of DOE O 452.1E. The now credible accident scenarios will have to be analyzed.What is a credible accident and what are the positive measures in each accident chain. If the positive controls are in the design, then it will have to be evaluated as well for independence and effectiveness.

SNL COMMENT: Positive Measures should not include stronglink switches. The weapon components provide safety in the full-up round configuration. When the weapon is in a disassembled configuration safety depends upon the surrounding environment provided by PX. In rare circumstances, the weapon safety features are depended on when the weapon is in the dissassembled configuration.

Response:
Accept with Modifications

There is no programmatic change for Sandia. Verification of the stronglinks is often credited as a NES positive measure. The stronglink switches, themselves, are not included as positive measures when evaluating positive measures for nuclear explosive operations. They are credited in weapon response, as appropirate, for the configuration of the weapon. The term "positive measures" has been used in place of "controls" to avoid confusion with TSR controls. NES controls are not necessarily TSR controls.

Changed to the following:

Positive Measures. Process or facility design features, safety rules, procedures, or other controls used individually or collectively to provide nuclear explosive surety. Positive measures are intended to ensure a safe response in applicable operations. Some examples of positive measures are verification of strong-link switches; verification of other safety devices; administrative procedures and controls; general and specific nuclear explosive safety rules; design control of electrical equipment and mechanical tooling; and physical, electrical, and mechanical restraints incorporated in facilities and transport equipment.

SME pasena@sandia.gov
Positive Measures should not include stronglink switches. The weapon components provide safety in the full-up round configuration. When the weapon is in a dissasembled configuration safety depends upon the surrounding environment provided by PX. In rare circumstances, the weapon safety features are depended on when the weapon is in the dissassembled configuration.

Response:
Accept

Changed to the following:

Positive Measures. Process or facility design features, safety rules, procedures, or other controls used individually or collectively to provide nuclear explosive surety. Positive measures are intended to ensure a safe response in applicable operations. Some examples of positive measures are verification of strong-link switches; verification of other safety devices; administrative procedures and controls; general and specific nuclear explosive safety rules; design control of electrical equipment and mechanical tooling; and physical, electrical, and mechanical restraints incorporated in facilities and transport equipment.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME christina.pak@hq.doe.gov

The definition of "record" here is not entirely consistent with the reference to a "record" in the definition of document above. Earlier, the directive states that a record is a "completed document that provides objective evidence of an item, service, or process." Here, the definition of record is in part "evidence of the organization, functions, policies, decisions, operations, or other activities."

Response:
Accept with Modifications

Parenthetical expresstion "documentation" removed from Section 4.k and Attachment 1, Section 11.

Section 6.d contains the statement, "A document is not considered a record until it is a completed document that provides objective evidence of an item, service, or process." This is clarification that the draft findings written by the NESSG are not records. The record is the final report containing the findings.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME Stephen.Smith@hq.doe.gov
Correct spacing in ee.(1).

Response:
Accept Corrected spacing.

7. REFERENCES

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In b., please add a space before "03-11-13."

Response:
Accept Space added.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In e., please change the Order's title to: "*Verification of Readiness to Startup or Restart Nuclear Facilities.*"

Response:
Accept Changed title of 425.1D to "Verification of Readiness to Startup or Restart Nuclear Facilities".

Suggested comment from Cecelia Kenney for Headquarters AU (formerly HS)

SME Lesley.Nelson-Burns@hq.doe.gov wrote:

page 14, par. 7, "References" (Completeness/Clarity/Accuracy)-The requirements paragraph 4.d. on page 5, specifically references the 470 series of directives. However, the only 470 series directive listed in the "References" is DOE O 470.4B Chg 1, Safeguards and Security Program. DOE O 470.4B Chg 1 does not address the requirements for identifying classified and controlled information. In order for proper safeguarding to occur, items must first be identified as requiring classification or control. Several 470 series directives that are not currently cited as references contain these requirements for classified and controlled information.

Recommendation: Create a linkage to the Departmental directives in the 470 series that govern the identification of classified and controlled information by adding the Directives identified below to the "References" section. 10 CFR part 1017 should also be listed since it contains protection/safeguarding requirements for Unclassified Controlled Nuclear Information. Note: 475.2A will soon become 475.2B.

DOE O 475.2A, Identifying Classified Information, 2/1/11

DOE O 471.1B, Identification and Protection of Unclassified Controlled Nuclear Information, 3/1/10

DOE O 471.3 Chg 1, Identifying and Protecting Official Use Only Information, 4/9/03

DOE M 471.3-1 Chg 1, Manual for Identifying and Protecting Official Use Only Information, 4/9/03

10 CFR Part 1017, Identification and Protection of Unclassified Controlled Nuclear Information

Response:
Accept Listed Directives and Code were added to the reference section.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov

In i., please add the word "*Use*" before the word "*Control*" in the title of the Order.

In j., please change the date to "5-14-09."

In k., please change the date to "12-20-10."

Response:
Accept with Modifications

Changes made:

In i., added the word "*Use*" before the word "*Control*" in the title of the Order.

In j., date on document is "4-14-09". Issue date listed on the web page is listed as "5-14-09", but document has approval date of "4-14-09".

In k., date on document is "12-16-10". Issue date listed on the web page is listed as "12-20-10", but document has approval date of "12-16-10".

I could not find anything in the Directive Tools webpage to address this, but it would seem prudent to list the date marked on the document itself.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov

In m., please add a space before the date and change the date to: "7-21-2011."

Response:
Accept with Modifications Added the space. Chg. 1 is dated 2-15-13, so I did not change the date.

Suggested comment from Sharon Edge-Harley for Headquarters IEA (Independent Enterprise Assessment)

SME Kathy.McCarty@hq.doe.gov wrote:

Section 7.l. - Please remove the term "Performance Assurance" in describing the DOE Independent Oversight Program in DOE Order 227.1 as the term refers to a prior organization title that no longer exists.

Response:
Accept

Changed to:

DOE O 227.1, *Independent Oversight Program*, dated 08-30-11, establishes requirements and responsibilities for DOE Independent Oversight that provides DOE and contractor managers, Congress, and other stakeholders with an independent evaluation of the adequacy of DOE policy and the effectiveness of line management performance in safeguards and security and other critical functions.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please change item s. to read as follows: National Security Presidential Directive-28, *United States Nuclear Weapons Command and Control, Safety, and Security,* dated June 20, 2003.

Response:
Accept Changed item s. to read as follows: National Security Presidential Directive-28, *United States Nuclear Weapons Command and Control, Safety, and Security,* dated June 20, 2003. Also

renumbered due to adding more references from another comment.

ATTACHMENT 1. CONTRACTOR REQUIREMENTS DOCUMENT

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] In the term "initial positive measure," the word "initial" is confusing and could be construed ambiguously.

[S] Delete the word "initial."

Response:
Accept

DNFSB Comments for 4.a (1) and (2) and Att 1, 2.a. and 2.b.

[C] As written, it is possible that the two positive measures chosen for a given scenario in section 4.a. (1) and (2) are administrative controls. Reliance on two administrative controls for prevention of IND/HEVR is not acceptable.

[S] Add language on the preferential selection of engineered controls, design features, etc., as a positive measure, and the prohibition against selecting two administrative controls for a single scenario.

Response:
Accept with Modifications Added paragraph on Hierarch of Positive Measures.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "credible," if used, needs to be defined. "Credible" is ambiguous in this context, and might become the subject of endless debate.

[S] Delete the term "credible."

Response:
Reject Credible scenarious are defined in NA SD 452.2.

DNFSB Comments for 4.a (2) and Att 1, 2.b.

[C] The term "if the first measure fails" needs to be defined, discussed, or replaced with a better term.

[S] Replace "if the first measure fails" with the phrase used in all previous revisions of the order, "given an accident or inadvertent act."

Response:
Reject Response given previously on 4a(2).

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] Using "effectively interrupt each credible chain of events" is inconsistent with sections 4.a (4) through (6). It is also a large deviation from previous standards that define the scenario as "interrupt accidents, inadvertent acts, or unauthorized activities."

[S] Replace "effectively interrupt each credible chain of events" with "interrupt accidents, inadvertent acts, or unauthorized activities."

Response:
Accept with Modifications

Added:

"Effectively interrupt" means that the chain of sequential events that must happen between the initiating event and the NES consequence are stopped at some point after the initiating event and prior to the NES consequence. Similar to 4b(1) above, prevention of unintended /unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that leads to an adverse environment.

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "effectively interrupt" must be defined. Both "effective" and "interrupt" are ambiguous in this context.

[S] Use the word "prevent" as in 4.a (3) through (6). Otherwise, describe the level of reliability expected for a control to be "effective" and define "effectively interrupt" the same as "prevent" in 4.b (1).

Response:
Accept with Modifications Added paragraph defining "effectivey interrupt".

DNFSB Comments for 4.a (1) and Att 1, 2.a.

[C] The term "events" needs to be defined. "Events" is ambiguous in this context, and might become the subject of endless debate.

[S] Delete the term "events."

Response:
Accept with Modifications

Added pragraph 4.c(5) and CRD 4.e to address "initiating events".

"Effectively interrupt" means that the chain of sequential events that must happen between the initiating event and the NES consequence are stopped at some point after the initiating event and prior to the NES consequence. Similar to 4b(1) above, prevention of unintended /unauthorized nuclear explosive detonation and unintended main charge high explosive (HE) violent reaction is a primary goal in the design and performance of nuclear explosive operations. As used in this paragraph, the term "initiating event" means an initial event or unauthorized (non-malevolent) act that leads to an adverse environment.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov
I do not concur with the changes to a or b. Please see the comments in the body of the order on 4.a. (1) and (2)

Response:
Accept with Modifications Comments responded to in the requirements section of the report.

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO:
1a. Suggest adding requirement to not exceed the 4 lb TNT with a probability of one in a million to this definition.

1b. One-point safety definition; this is a design requirement that is built into the weapon. Stating to prevent or mitigate implies that this is a function of an external component.

SNL COMMENT: I do not concur with the changes to a or b. Please see the comments in the body of the order on 4.a. (1) and (2)

Response:
Accept with Modifications One point safety definition changed. Please see comments in the

Requirements section.

SME robbins12@llnl.gov

The LLNL comment in this CRD is repeated form our comment in the corresponding section (Section 4) of this Order.

This NNSA proposed change to the NES standards (1) and (2) will reduce the standard of safety for our NEOs. The philosophy of both preventing the adverse environment and preventing the NES consequence given the adverse environment has been the cornerstone of nuclear explosive safety since the NES standards were first published in 1963. While the order still references this philosophy, the requirement to meet these criteria has been removed. The proposed change makes it difficult for NESSGs to write findings against processes that do not follow this philosophy and even if findings are created, it is easy for management to brush these aside when the requirements are met. As such, implementing the new requirements will result in reductions to the required level of safety of our NEOs.

I can appreciate the desire to make the current requirements more clear cut and agree the proposed change does make it easier to determine when the standard is met. In addition, there may be cases where it is not feasible to meet both current 1st and 2nd standard. However, the right solution is to allow for reasonable exceptions when necessary, not lowering the bar for all situations. We rely on the NESSG for their expert judgment; provide additional guidance as needed to help interpret the current standards, especially for the situations when there is really nothing more that can be reasonably done, as opposed to lowering the standard.

Additionally, this change in requirement blurs line between historic NESSG concerns and the Authorization Basis criteria established by 10CFR830 – where the differences in safety approach have long been recognized to positively enhance safety of a business where a failure is catastrophic. We do not want the NESSG to merely count up controls to determine safety - that is already being done. As an additional point of reference, the United Kingdom requires three Lines of Defense with proven failure rates to less than one in 1000 in order to preclude Inadvertent Nuclear Detonation in their NEOs. I cannot fathom why NNSA would think two positive measures, of subjective quality, is by any means adequate.

LLNL requests removal of the proposed change to NES Standards (1) and (2).

Response:
Accept with Modifications LLNL comments in the Requirements section were responded to.

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.a (5) and Att 1, 2.e.

[C] The term "given an adverse environment or unauthorized act" is used correctly, but is inconsistent with the term used in 4.a (1) and (2).

[S] Use the same term in 4.a (1) and (2) or use a term here that is consistent with whatever term is used there.

Response:
Reject

It was a deliberate decision to keep the same term in the design standards. Please see comment responses in the Requirements section.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In d., pleas add "measures," after "operation-specific."

Response:
Accept

Major comment from Cathy Tullis for Headquarters NA

Included comments:

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh:
1a. Definition of Positive Measures should not include weapons components. Weapons components may not be in their original configuration and therefore not function as intended.

SNL COMMENT: I do not concur with e. Please see the comments in the body of the order on 4.a.(5).

Response:
Accept with Modifications See response to the same comment in the Requirements section.

SME llluna@sandia.gov
I do not concur with e. Please see the comments in the body of the order on 4.a.(5).

Response:
Accept with Modifications Please see responses to the SNL comments in the Requirements section.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In the second sentence in 7, please add "nuclear weapon" before "design responsibilities."

Response:
Accept

Added "nuclear weapon" before "design responsibilities".

Major comment from Steven Petras for HSS-DR-DNFSB

DNFSB Comments for 4.f (3)(a)3 and Att 1, 7.c.(1)(c)

[C] Addition of the phrase "in an otherwise normal environment" is inconsistent will all historical understanding of one-point safety and current requirements in DOE and DoD.

[S] Delete the phrase "in an otherwise normal environment." Also delete the entire sentence that immediately follows this phrase on page 6: "It is desirable that the probability of achieving a nuclear yield greater than 4 pounds TNT equivalent in the event of a one-point initiation of the nuclear explosive's high explosive in credible combined abnormal environments to be less than one in a million." Preserve the historic definition of one-point safety.

Response:
Accept with Modifications Addressed in the response to the same comment in the Requirements section.

Suggested comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
In c., please change "weapon" to "weapons."

Response:
Accept with Modifications

Changed "weapon's" to "main charge".

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME robbins12@llnl.gov

This comment on one point safety in this CRD mirrors the comment made in Section 4 in the Order.

With respect to the One Point Safety Criterion, what we want is OPS for all creditable environments. It does not make sense to change the OPS requirement to specify "normal" or "abnormal" environments because by definition, the situation only occurs in an abnormal environment. Hence, it is always abnormal, never normal. The attempted additional explanation only obfuscates the intent...that US nuclear weapons shall be one point safe (period).

Furthermore, including the word, "credible" is not useful, because "credible" is not a quantifiable amount. What is credible to you may be non-credible to me. Thus the phrase "credible combined abnormal environment" is vague and will likely cause confusion.

There will always be challenges and new scenarios to evaluate, but that's what the design agencies are here for. You can't get a robot to do this work. You need someone to look at each situation, think about it, and make an assessment, where sometimes the assessments require calculations.

Adding the part about "without a safing device" is not needed and will likely also cause confusion in some other scenarios. The phrase, "inherently safe" means just that, inherently, which means without a safing device. So the statement is redundant.

Sometimes more is not better. In this case, less words, and in fact the original words, are the best. The recommendation from both the LLNL NESSG and the physicist who have spent decades performing these types of assessments, is to let stand the original wording of the 1968 Walske criterion.

Response:
Accept with Modifications

Addressed in the response to the same comment in the Requirements section.

SME llluna@sandia.gov

The previous version of the order required explicit approval from the Secretaries of the DOE and the DOD if these requirements were not followed. As stated inthe main body of the order, these shold be put back in.

The previous version of the order has nuclear detonation, rather than nuclear explosive detonation. This is a departure from the Walske requirements and should not be changed.

Response:
Reject Addressed in the response to the same comment in the Requirements section.

Jennifer Bitsie for Sandia Field Office

Comment Clarification from Jody Pugh, SFO: 1a. CRD attachment. Comments reflect same emphasis as #3.

SNL COMMENT: The previous version of the order required explicit approval from the Secretaries of the DOE and the DOD if these requirements were not followed. As stated inthe main body of the order, these shold be put back in.

The previous version of the order has nuclear detonation, rather than nuclear explosive detonation. This is a departure from the Walske requirements and should not be changed.

Response:
Reject Addressed in the response to the same comment in the Requirements section.

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME llluna@sandia.gov
for (2) add the requirement for less than 4 lbs TNT equivalent yeild with a probablility of less than one in a million.

Response:
Reject

SME bland1@llnl.gov
Do to claimed cost issues the use control capabilities have not been upgraded during most LEP. Thus to state they will be upgraded is incorrect.

Response:
Reject The requirement is to upgrade them. If they cannot meet the requirement, then that must be discussed with NA-12, NA-10, and NA-SH.

Suggested comment from Cathy Tullis for Headquarters NA

Included comments:

SME bland1@llnl.gov
Due to claimed cost issues the DoD especially NAVY is unwilling to agree to 5. Unless NNSA is going to make this a NNSA requirement for LEP it will not happen and NNSA has yet to make it a requirement. Let's not say we will do something if we are not going to follow through. It further reduces our credibility.

Response:
Reject I will send this comment to NA-12 for advice.

SME llluna@sandia.gov
In (5) add the requirement for less than 4 lbs TNT equivalent yield with aprobability of less than one in a million. This is consistent with the longstanding guidance for nuclear safety.

Response:
Reject We can discuss in a closed forum.

Major comment from Cathy Tullis for Headquarters NA

Included comments:

SME bland1@llnl.gov
A cost benefit analysis of technologies should be performed to avoid wasteful R&D. The benefit analysis should be performed by the Use Control Effectiveness committee.

Response:
Reject I don't disagree with the comment. But that should not be included in the DOE directive.

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME Eric.Mulch@hq.doe.gov

In order to avoid being seen as incorporating requirements of another Order via this CRD, add the underlined text as follows:

•(2) DOE O 426.2 Chg. 1, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*, dated 04-21-10, as applicable.

Response:

Accept

Major comment from Steve Duarte for Headquarters GC

Included comments:

SME robin.henderson@hq.doe.gov
Please change the reference to the Order to :"DOE O 243.1B, *Records Management Program*, dated 3-11-13."

Response:
Accept

SME Eric.Mulch@hq.doe.gov

In order to avoid being seen as incorporating requirements of another Order via this CRD, add the underlined text as follows:

Records. Records (documentation) must be maintained in accordance with National Archives and Records Administration-approved DOE or site-specific records retention and disposition schedules per DOE O 243.1, *Records Management Program*, dated 2-3-06, or successor directive, as applicable.

Response:
Accept